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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/582,903	08/11/2000	KENJI KATO	S004-4034(PCT)	3167
40627 7590 04/04/2007 ADAMS & WILKS 17 BATTERY PLACE SUITE 1231 NEW YORK, NY 10004			EXAMINER DINH, TAN X	
			ART UNIT 2627	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		04/04/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

**Application No.**

09/582,903

**Applicant(s)**

KATO ET AL.

**Examiner**

TAN X. DINH

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☐ Claim(s) \_\_\_\_\_ is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11-14, 101, 103, 104, 120-130 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

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1) The amendment filed 1/25/2007 is acknowledged. Non-elected claims 10,15-100,102 and 105-119 have been canceled and new claims 120-130 have been added in previously response.

The previously Office actions is withdrawn herein. The following is a new grounds of the rejection.

2) The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

3) (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4) Claims 1,120,121,127 and 128 are rejected under 35 U.S.C. 102(b) as being anticipated by BREZOCZKY et al ( European Patent Application, EPA 0-549-236 A2 ).

a) BREZOCZKY et al discloses a near-field optical head as claimed in claim 1, comprising:

a planar substrate having a first surface, a second surface disposed opposite to the first surface and an inverted conical or pyramidal hole extending through the first and second surfaces and having at least one fine aperture formed at an apex thereof and disposed in the first surface ( Fig.3, first surface 41, second

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surface 31, inverted conical with fine aperture 37; see also figures 5 and 7 for different lay out of the optical head );

an optical waveguide disposed directly on the second surface of the planar substrate for propagating light ( Fig.4, slider 51 and figure 5 in details of slider 51, aperture 76 for guiding laser beam 46 ); and

a light reflection film disposed in the optical waveguide for reflecting in the direction of the fine aperture light propagated through the optical waveguide ( Fig.5, mirror 61 ).

As to claims 120 and 121, BREZOCZKY et al shows optical waveguide is integrally connected to the second surface of planar substrate ( Fig.5, the waveguide is integral formed of element as a single unit ), and near-field optical head is an floating-type optical head ( figure 5, the optical head is floating type ).

b) BREZOCZKY et al discloses a near-field optical head as claimed in claim 127, comprising:

a planar substrate having a first surface, a second surface disposed opposite to the first surface and an inverted conical or pyramidal hole extending through the first and second surfaces and having at least one fine aperture formed at an apex thereof and disposed in the first surface ( Fig.3, first surface 41, second

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surface 31, inverted conical with fine aperture 37; see also figures 5 and 7 for different lay out of the optical head );

an optical waveguide disposed for propagating light along optical path, the optical waveguide being formed on the second surface of the planar substrate so that the optical waveguide and the planar substrate form an integral structure ( figure 5, slider 51, aperture 76 for guiding laser beam 46, etc., are formed as an integral structure ); and

a light reflection film disposed in the optical waveguide for reflecting in the direction of the fine aperture light propagated through the optical waveguide ( Fig.5, mirror 61 ).

As to claim 128, BREZOCZKY et al shows the near-filed optical head is an air floating-type optical head ( the air floating between optical head and the recording medium ).

5) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6) This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the

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examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7) Claims 2-14, 101, 103, 104, 122-126, 129 and 130 are rejected under 35 U.S.C. 103(a) as being unpatentable over BREZOCZKY et al (EPA 0-549-236 A2).

BREZOCZKY et al discloses all the subject matter as claimed in claim 2, except to specifically show that the waveguide extends into the inverted conical or pyramidal hole. It would have been obvious to someone within the level of skill in the art at the time of the invention was made to extend the waveguide into inverted conical of BREZOCZKY et al as claimed. The rationale is as follows:

The waveguide for guiding the light beam, such as, optical fiber, could be made in any desirable sizes, shapes, angles, etc., and formed at any suitable locations on the optical head. Thus, to make a waveguide extends into the inverted conical or pyramidal hole

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of BREZOCZKY et al's optical head as claimed is deemed obvious to someone within the level of skill in the art.

As to claims 3 and 4, the feature of using different degree of slant surfaces in inverted conical of near-field optical head is old and widely used in the optical recording art ( See ITO et al, US 6,304,527, figures 6B and 6C ).

As to claims 5-7, since the inverted conical with different degree of slant surfaces is old and widely used as indicated above, one with ordinary skill in the art at the time of the invention was made would have been motivated to make an inverted conical with slant surfaces at any desirable angles ( greater than 50 degrees or less than 50 degrees ) or curved as claimed.

As to claim 8, BREZOCZKY et al shows the mirror focuses light to fine aperture ( Fig.5, mirror 61 ).

As to claim 9, the core and clad are inherent in every optical wave guide.

BREZOCZKY et al discloses all the subject matter as claimed in claims 11-14, 101, 103, 104 and 123-126, such as a planar substrate having a first surface, a second surface disposed opposite to the first surface and an inverted conical or pyramidal hole extending through the first and second surfaces and having at least one fine aperture formed at an apex thereof and disposed in the first surface ( Fig.3,

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first surface 41, second surface 31, inverted conical with fine aperture 37; see also figures 5 and 7 for different lay out of the optical head ), an optical waveguide disposed for propagating light along optical path, the optical waveguide being formed on the second surface of the planar substrate so that the optical waveguide and the planar substrate form an integral structure ( figure 5, slider 51, aperture 76 for guiding laser beam 46, etc., are formed as an integral structure ), and a light reflection film disposed in the optical waveguide for reflecting in the direction of the fine aperture light propagated through the optical waveguide ( Fig.5, mirror 61 ), *except that* the optical waveguide is coupled or connected to planar substrate *rather than* formed or bonded on the surface of the planar substrate. It would have been obvious to someone within the level of skill in the art at the time of the invention was made to us the step of formed or bonded on BREZOCZKY et al's near-field optical head for coupling or connecting between optical waveguide and substrate as claimed. The rationale is as follows:

BREZOCZKY et al teaches a near-field optical head including every necessary elements and a detail connecting between them, in another words, BREZOCZKY et al draws a detail "blue print" to build a near-field optical head. Further, the steps of bonding or forming



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are old and widely used in art during manufacturing optical head for connecting or coupling between elements. Therefore, one of ordinary skill in the art at the time of the invention was made would have been motivated to use the steps of bonding or forming for connecting or coupling between elements in near-filed optical head as claimed.

As to claims 122 and 129, the feature of bonding optical waveguide to surface of substrate are old and widely used in the manufacturing near-field optical head ( see the rejection of claims 11-14, 101, 103 and 104 above ).

BREZOCZKY et al discloses all the subject matter as claimed in claim 130, except to specifically show that the waveguide extends into the inverted conical or pyramidal hole. It would have been obvious to someone within the level of skill in the art at the time of the invention was made to extend the waveguide into inverted conical of BREZOCZKY et al as claimed. The rationale is as follows:

The waveguide for guiding the light beam, such as, optical fiber, could be made in any desirable sizes, shapes, angles, etc., and formed at any suitable locations on the optical head. Thus, to make a waveguide extends into the inverted conical or pyramidal hole of BREZOCZKY et al's optical head as claimed is deem obvious to someone within the level of skill in the art.

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8) Applicant's arguments with respect to claims 1-9,11-14,101,103,104,120-130 have been considered but are moot in view of the new ground(s) of rejection.

The flexure spring suspension 63 in BREZOCZKY et al is a part of the near-field optical head and claims 1-9,13,120-122 and 125 are still found rejectable as shown above.

9) The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Applicant is reminded that in amending in response to a rejection of claims ( if the rejection involves with any applicable arts ), the patentable novelty must be clearly shown in view of the state of the art disclosed by the references cited and the objection made. Applicant must also show how the amendments avoid such references and objections. See 37 CFR § 1.111(c).

Form PTO-892 is attached herein.

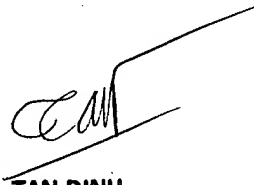
10) Any inquiry concerning this communication or earlier communications from the examiner should be directed to TAN XUAN DINH whose telephone number is (571)272-7586. The examiner can normally be reached on MONDAY to FRIDAY from 9:00AM to 5:00PM.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be

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obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov/>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**TAN DINH**  
**PRIMARY EXAMINER**

March 29, 2007